

REMARKS

In view of the above amendments and the following remarks, reconsideration of the application is respectfully requested. Claims 1-11, 21, and 23-27 are currently pending. Claims 12-20 and 22 were canceled by previous amendments. Claim 27 has been added. Claims 10, 24, and 26 have been amended to clarify the invention. No new matter has been added. Applicant notes with appreciation Examiner's indication of allowable subject matter in the application.

Objections to the Drawings

The drawings were objected to under 37 C.F.R. § 1.84 (h)(3). Specifically, the Office indicated that Figs. 1a-c, 2a-c, and 5a-c lacked proper cross-hatching. Applicant has submitted replacement drawings with appropriate cross-hatching for Figs. 1a-c, 2a-c, and 5a-c; withdrawal of the objection is respectfully requested.

Claim Objections

The Office objected to claim 10 because the phrase "the securing element" lacked antecedent basis. Claim 10 now depends from new claim 27, which provides antecedent basis for "the securing element" in claim 10. New claim 27 recites a plug wherein the actuating mechanism further comprises a securing element for retaining the actuating member in the first position and wherein the actuating member is a sleeve. Support for claim 27 is found on page 14, lines 18 to 33 of the specification.

Claim Rejections under 35 U.S.C. § 102

In the Office Action, claims 1, 2, 9-11, 21, 23, and 24 were rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 6,220,357 to Carmichael.

Carmichael discloses a downhole tool having selectively openable ports. The tool is actuatable between a closed configuration in which the ports are closed, a primed configuration in which the ports are primed for opening, and an open configuration in which the ports are opened.

Contrary to the assertion by the Office, Carmichael does not disclose a plug for controlling a fluid flow in a well bore at a packer or other sealing element comprising an actuating mechanism operable under pressure in the well bore to set the plug in a first natural state wherein the actuating member is in the first position for a pressure under a predetermined pressure range, a second closed state wherein the actuating member is locked in the first position regardless of the pressure, and a third open state wherein the actuating member is moved to the second position on increasing the pressure range and holding the pressure in the range for a predetermined time as recited in claim 1.

The configurations of the tool disclosed in Carmichael are not the same as the three positions of the actuating member recited in claim 1. Carmichael discloses a downhole tool that may be positioned in an initial closed configuration, which the Office argues corresponds to the first natural state recited in claim 1, until production is required at which point a pressuring up cycle moves the downhole tool into the primed but still closed configuration, which the Office argues corresponds to the second closed state recited in claim 1. Finally, the Office argues that the configuration shown in Figs. 25, 26, and 27 of Carmichael, where the plurality of ports of the downhole tool are in an open state as a result in a reduction of fluid pressure (see for example, column 5, lines 57 to 59) corresponds to the third state recited in claim 1. This argument is

untenable. There is no mention or suggestion in Carmichael of increasing the pressure to a predetermined range and holding the pressure in the range for a predetermined time to move an actuating member to a second position to uncover a plurality of radial ports. In fact, Carmichael teaches the opposite; a reduction of pressure is required to move the actuating member to the second position. Consequently, independent claim 1, and all claims depending from claim 1, are patentable over Carmichael.

Independent claim 21 is also patentable over Carmichael. Carmichael fails to disclose a method for controlling fluid flow in a well bore through a plug operated by an actuating mechanism including, among other steps, the step of keeping the pressure within a predetermined range over sufficient time to cause the actuating mechanism to move the actuating member from the first position to the second position to uncover each of the plurality of radial ports. In Carmichael, the fluid pressure within the inner bore of the downhole tool is increased to a pressure high enough to shear a shear pin locking the sleeve in position relative to the body of the downhole tool. The Office argues that this corresponds to the step of increasing pressure from a surface of the well bore to within a predetermined range, as recited in Claim 21. As highlighted above, Carmichael teaches that it is a reduction in pressure that causes the spring to move the sleeve, which the Office argues corresponds to the actuating member recited in claim 21, to a position wherein the plurality of radial ports are uncovered. *See e.g.*, Carmichael, col. 4, line 64 to col. 5, line 7 and col. 5, lines 57-59. Carmichael does not disclose or suggest holding the pressure within a predetermined range over sufficient time to cause the spring to move the sleeve from a first position in which the ports are closed to a second position in which the ports are uncovered. Furthermore, the holding of the pressure within the predetermined range, that is, high enough to shear the pin locking the sleeve in position, over a sufficient time would only

hold the spring in a primed compressed state and would not cause the sleeve to move from the first position to the second position as the biasing force of the spring has to be less than the pressure force required to shear the shear pin to maintain the downhole tool in its natural state with the ports closed. Consequently, independent claim 21, and all claims depending from claim 21, are patentable over Carmichael.

Claim Rejections under 35 U.S.C. § 103

In the Office Action, claims 7 and 8 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Carmichael in view of U.S. Patent No. 6,978,840 to Henderson. Claims 7 and 8 depend from independent claim 1 and are patentable over Carmichael for at least the reasons given above regarding claim 1. Henderson does not overcome the deficiencies of Carmichael with respect to claim 1. Henderson discloses a well screen assembly with a controllable variable flow area. However, Henderson does not disclose or teach a third open state as recited in claim 1. Thus, dependent claims 7 and 8 are patentable over Carmichael in view of Henderson for at least this reason.

In the Office Action, claim 25 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Carmichael in view of Official Notice. Claim 25 is not rendered obvious by Carmichael. The Office concedes that Carmichael fails to disclose a pressure testing above the plug, but takes Official Notice that “performing a pressure test in a wellbore is well known” and indicates that “it would have been obvious to one skilled in the art at the time of invention to perform a pressure test in the operation of Carmichael so that an operator can ensure all parts of the apparatus are functioning properly.” Applicant respectfully submits that the Examiner has improperly relied on official notice as a basis for the rejection. It is never appropriate to rely

solely on common knowledge in the art without evidentiary support in the record, as the principal evidence upon which a rejection is based. *See* MPEP 2144.03. The Office has presented no evidence, other than Applicant's disclosure, to support the obviousness rejection. Carmichael does not disclose or suggest pressure testing above the plug. For at least these reasons, claim 25 is patentable over Carmichael. Applicant respectfully requests that the rejection of claim 25 be withdrawn.

CONCLUSION

Applicant submits that each of the pending claims in the application is now directed to patentable subject matter. Allowance of all pending claims in the application is respectfully requested.

The Director is hereby authorized to charge any fee deficiency associated with the submission of this paper (or with any paper filed in this application by this firm) to our Deposit Account No. 04-1105, under Order No. 65584(71678)

Respectfully submitted,

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/Jacob P. Martinez #57924/

Jacob P. Martinez, Reg. No. 57,924
Attorney for Applicant

EDWARDS ANGELL PALMER & DODGE LLP
P.O. Box 55874
Boston, MA 02205
Tel: (203) 353-6835
Fax: (866) 658-1067
Customer No. 21,874